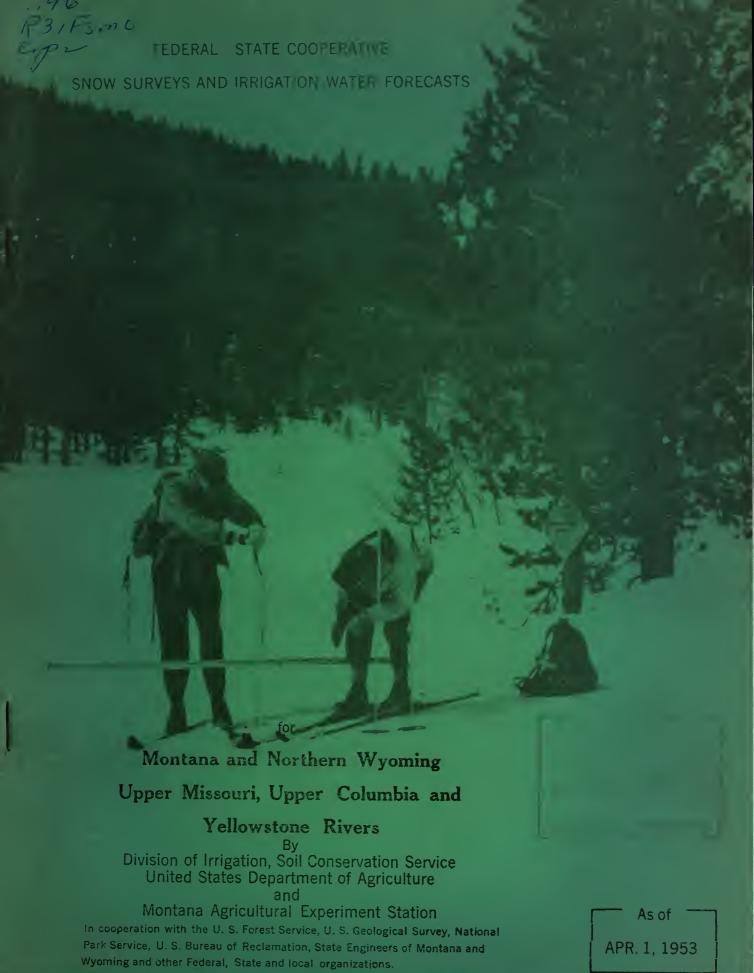
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UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in this bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge River Forecast Center U. S. Weather Bureau 712 Federal Office Building Kansas City 6, Missouri

FEDERAL -- STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA AND NORTHERN WYOMING

Upper Missouri and Upper Columbia River
Basins

Report Prepared by

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and

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and

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IRRIGATION WATER SUPPLY OUTLOOK FOR SEASON 1953 AS OF APRIL 1, 1953

April 1st snow survey measurements made over the Upper Missouri Basin indicate that the water supply for irrigation use will be FAIR for this coming season. The snow pack this season is 76% of last year (1952), and about 95% of the average over 5-18 years' records.

Due to the dry fall and mild winter temperatures, the ground is dry under the snow pack and the soil is not frozen. The present condition of the snow is very ripe, and with normal temperatures during the spring months, it should leave the mountains early. Those irrigation projects under regulated reservoirs should have a good supply, while those under unregulated streams will need supplemental water for late July and August irrigation.

The snow pack over the Wind River and Big Horn River in Wyoming is generally fair, averaging approximately 85% of average and considerably below last year. The soil under the snow is dry and unfrozen. The snow pack itself is ready to leave the mountains with normal spring temperatures. It is anticipated that the runoff this season will be early and that there will be very little hold-over for mid-summer irrigation. Those irrigation projects under reservoirs should have a good supply.

The snow pack over the Columbia River Basin in Montana is generally good, and there should be sufficient water for irrigation and power supply during the summer through July. However, the soil under the snow is dry and not frozen. Considerable soil priming will be necessary before runoff starts. It is anticipated that the runoff will be early due to the high density of snow and general high densities over the entire basin. The snow pack this season is approximately 83% of last year and about 95% of average for a period of 5-17 years.

JEFFERSON RIVER: April 1 snow surveys indicate that the supply for irrigation water this season will be good - not as good as last year, but in comparison with past records, the average indicates about 101% snow pack. The Beaverhead River at Barratts should flow approximately 193,000 acre feet during the April-September season, or 97% of average. The Big Hole River at Melrose should flow approximately 789,000 acre feet from April-September, or 101% of average. The Jefferson River at Sappington should flow approximately 85% of average. Detail river forecasts are listed on the forecast sheet of this bulletin. for the Missouri River in Montana.



MADISON RIVER: On the Madison River this season, the snow pack is approximately 57% of last year and 99% of the average year over 18 years of records. It is anticipated that the Madison River at Yellowstone will flow approximately 175,000 acre feet or 88% of average during the season April-September.

GALLATIN RIVER: The snow pack on the Gallatin River averages very close to the Madison, showing 64% of last year and 93% of average. The Gallatin River at Gateway should flow approximately 403,000 acre feet for the season April-September, or 89% of average.

MISSOURI RIVER MAIN STEM: The Missouri River main stem below Three Forks will carry a fair water supply this coming season. The snow pack on the tributaries between Toston and Fort Benton indicate approximately 75% of last year or 79% of average. At Toston, the flow from April-September is forecast 86% of average, while the Fort Benton forecast is 90% of average. Detailed figures are listed on the forecast sheets of this bulletin.

UPPER YELLOWSTONE RIVER: The snow pack in Yellowstone Park this season is good to fair, indicating approximately 79% of last year and 101% of the average over 7-19 years. It is anticipated that the April-September seasonal flow at Corwin Springs will be 92% of average, 92% at Livingston, 80% at Billings, 81% at Miles City, and 80% at Sidney. Detailed volumes for these stations are shown on the forecast sheet for the Missouri Basin in this bulletin.

LOWER YELLOWSTONE RIVER (IN WYOMING): The snow pack on the Popo Agie River this year indicates approximately 56% of last year and 82% of average over 4-17 years. There should be a good water supply for irrigation, although it is anticipated that it will come early in the season. The North Popo Agie near Lander will flow approximately 68% of average, the Little Popo Agie near Hudson 82% of average, with the main Popo Agie at Riverton flowing 275,000 acre feet during the April-September season, or 71% of average.

WIND RIVER: The snow cover on the Upper Wind River Basin is fair this season, indicating approximately 83% of 1952 and 86% of the average of from 5-18 years of records. The snow is loose and ready to leave the mountains with normal spring temperatures. The runoff season should be early, with considerable snow water being used for soil priming. The Wind River at Riverton will flow approximately 94% of average or 564,000 acre feet during the April-September season. The snow pack above Buffalo Bill Reservoir should produce approximately 88% of the average seasonal supply, or 693,000 acre feet of water.

BIG HORN RIVER: The Big Horn River as a whole will flow approximately 85% of average during the coming season. Detailed figures for Thermopolis, Kane and St. Xavier are shown on the forecast sheets for the Yellowstone River tributaries in Wyoming. The snow pack on the Big Horn Mountains feeding the Tongue and Powder Rivers averages approximately 102% of 1952 and 101% of average for the Tongue, while the Powder averages 65% of 1952 and only 76% of average. These figures are based on 3-18 years of records. Detailed discharge figures for the April-September period are shown on the forecast sheet for the Yellowstone River tributaries in Wyoming.



COLUMBIA RIVER BASIN IN MONTANA: The snow pack on the Columbia River Basin in Montana is higher in percentage of average than the Missouri River Basin. The snow pack on the Upper Clarks Fork Basin averages approximately 82% of last year and 102% of average for 18 years of records. It is anticipated that the runoff will come early, and also that considerable snow will be lost in soil priming due to the unfrozen condition of the soil below the snow and the dry condition which is reflected by the slight rainfall of last fall. It is forecast that 1,590,000 acre feet of water will flow past the station above Missoula during the April-September irrigation season. This is 97% of the 10-year average ending in 1950. Other stream flow forecasts are listed on the forecast sheet for the Upper Columbia River in Montana.

The snow cover on the Bitterroot Basin this season indicates 82% of 1952 and 107% of average over 17 years of records. It is anticipated that the Bitterroot River at Darby will flow approximately 571,000 acre feet during the April-September period, or 98% of average.

The snow cover on the Flathead River above Kalispell is approximately 87% of last year and 92% of the average for 6-18 years' records. It is anticipated that the April-September seasonal flow at Columbia Falls for the three tributaries will be 5,887,000 acre feet, which is exactly 100% average. The South Fork of the Flathead River below Hungry Horse Dam should flow approximately 2,008,000 acre feet for the same period, or 96% of the 10-year average ending in 1950.

The stream flow forecasts for the several stations and tributaries to the Flathead are shown on the forecast sheet in this bulletin.



APRIL 1, 1953 FORECAST OF SEASONAL STREAM FLOW

	Seasonal Stre	emflowr	in Thouse	nds of A	cre Feet
UPPER MISSOURI RIVER	FORECAST 1953	%		Runoff	10-Yr.
IN MONTANA	April-September		April -	Sept.*	Avg.
IN MONTANA	Mpi 11-00 p temoci	Avg.	1952	1951	41-50
		1116	1//	- 1//1	41)0
RED ROCK RIVER					
Monida (Near) (1)	95•9	112			86
Kenedy Ranch (at)	74.4	120			62
BEAVERHEAD RIVER	14*4	10			
Barratts, Montana	193	97	222	170	198
BIGHOLE RIVER	-/-				
Melrose (near)	789	101		861	781
JEFFERSON RIVER					
Sappington (at)	984	86		1,144	1,134
MADISON RIVER					
West Yellowstone (near)	175	88	248	234	199
Garyling (near) (2)	292	70			419
McAllister (near) (3)	527	72			733
GALLATIN RIVEP					
Gateway (near)	403	89	596	399	4.54
Logan (at)	405	82	745	412	491
Hyalite Creek	33.6	92	41.0	27.7	36.7
MISSOURI RIVER		- 1			
Toston (at)	2,110	86	2825	2217	2,450
Fort Benton (at)	3,192	90		4072	3,524
Loma	3,702	88		5162	4,201
Zortman	3,982	87		5524	4,564
SUN RIVER	700	0.5			1.07
Vaughn (at) (5) MARIAS RIVER	380	95			401
Shelby (at)	1.1.7	81			545
Brinkman (near)	لبلاء لبلاء	80			
YELLOWSTONE RIVER	4412 "	00 .		_	549
Corwin Springs (at)	1720	92	2184	2254	1,858
Livingston (near)	1982	92	2104	2474	2,166
Billings (at)	3349	80	4642	4469	4,167
Miles City (at)	5509	81	6264	7237	6,774
Sidney (near)	5682	80		7063	7,086
SHIELDS RIVER	7002			100)	,,,,,,,
Wilsall (near)	34.6	79		32.2	44
CLARK FORK RIVER	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	17		,	
Chance (at)	465	79		731	589
Edgar (at)	491	78	613	766	630
JUDITH RIVER		' ' '			
Utica (near)	33.4	76	48	40	44
	in Storage in Lime	Recom	mir	40	

⁽¹⁾ Observed flow plus change in Storage in Lima Reservoir (2) Observed flow plus change in Storage in Hebgen Lake

⁽³⁾ Observed flow plus change in Storage in Hebgen and Ennis Lakes
(5) Observed flow plus change in Storage in Gibson, Willow Creek and Pshkun Res.

^(*) Preliminary data furnished by U.S. Geological Survey. Subject to revision.



APRIL 1, 1953

FORECAST OF SEASONAL STREAM FLOW

	Seasonal Stream	Flow in	n Thousa	nds of a	re feet
YELLOWSTONE RIVER TRIBUTARIES	Forecast, 1953	%		d runoff	10-Yr.
IN WYOMING	April-September	,	April	- Sept.*	Avg.
		Avg.	1952	1951	41-50
		<u> </u>	1302	1901	
WIND RIVER					
Riverton (at) (6)	546	94			534
BIG HORN RIVER					
Thermopolis (at) (7)	905	89			1,011
Kane (at)	1,264	86	767		1,475
St. Xavier (near) (8)	1,883	84	1,286		2,232
BULL LAKE CREEK					
Bull Lake (above)	145	72			202
Lenor (near) (6)	135	70			192
POPO AGIE RIVER					
Riverton (near)	275	71			375
NORTH FORK POPO AGIE RIVER					
Lander (near) (9)	51	68		87	75
LITTLE POPO AGIE RIVER					
Hudson (at)	47	82			57
GREYBULL RIVER					
Meeteetse (at)	182	77			238
Basin (near)	87	78			122
SHOSHONE RIVER					1
Buffalo Bill Dam (below)(10)	693	88		862	785
Byron (at) (10)	485	81	484	691	601
TONGUE RIVER					
Dayton (near)	95	83	104	108	114
Acme (near)	208	83		206	250
Decker (near) Montana(11)	211	76	261	210	276
POWDER RIVER					
Arvado (at)	136	83		59	165
Moorehead (at) Montana	2/12	77	244	117	313
Locate (at) Montana	274	70	303	150	390
MIDDLE FORK POWDER RIVER					7.
Kaycee (near)	61	75		50.3	81
NORTH FORK POWDER RIVER					
Mayoworth (near)	19	95		12	20
CLEAR CREEK	-				
Buffalo (near)	33	82		26	40
Arvado (near)	92	70		53.4	132
			L		

⁽⁶⁾ Observed flow plus storage in Bull Lake and Pilot Butte Reservoirs

⁽⁷⁾ Observed flow plus storage in Boysen Reservoir

⁽⁸⁾ Observed flow plus storage in Boysen and Buffalo Bill reservoirs

⁽⁹⁾ Observed flow plus storage in Bull Lake Reservoir

⁽¹⁰⁾Observed flow plus storage in Buffalo Bill Reservoir

⁽¹¹⁾Observed flow plus storage in Tongue Reservoir

^(*) Preliminary data furnished by U.S. Geological Survey. Subject to revision.



APRIL 1, 1953 FORECAST OF SEASONAL STREAM FLOW

	Seaso	nal Strea	mflow i	n thouse	nds of a	cre feet
UPPER COLUMBIA RIVER		T - 1953	%		ed runoff	
IN MONTANA	April-	April-	10-Yr.		- Sept.*	
	Sept.	July	Avg.	1952	1951	41-50
CLARK FORK RIVER Bonner (above) (3) Missoula (above) Missoula (below) St. Regis (at) Plains (near) (4) Cabinet Gorge (at) (4)	816 1,590 3,068 4,091 11,044 11,809	735 1,429 2,792 3,751	105 97 101 101 102 98	1,782 3,268 4,318 9,421	941 2,369 4,127 5,492 13,302 15,178	781 1,631 3,044 4,042 10,869 12,110
BLACKFOOT RIVER Bonner (near)	774	696	91		1,295	851
BITTERROT RIVER						
Darby (ne ar)	571	533	98	608	663	544
At Mouth (6)	1,1478		104	1,362	1,618	1,413
FLATHEAD RIVER Columbia Falls (near) Columbia Falls (at) (7) Polson (near) (4)	1,682 5,587 6,653	1,534 5,025	99 100 1 00	7,224 4,993	2,396 5,722 6,363	1,705 5,604 6,621
MIDDLEFORK FLATHEAD RIVER West Glacier (near)	1,598	1,482	96		2,138	1,664
SOUTH FORK FLATHEAD RIVER Columbia Falls (near)(7)	2,008	1,892	96	2,058	2,511	2,091

⁽³⁾ Difference in observed flow, Clark Fork above Missoula and Blackfoot at Bonner.

⁽⁴⁾ Observed flow plus change in storage in Flathead Lake & Hungry Horse Res. (6) Difference in observed flow, Clark Fork above and below Missoula.

⁽⁷⁾ Observed flow plus change in storage in Hungry Horse Reservoir.

^(*) Preliminary data furnished by U.S. Geological Survey, subject to correction.



S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

	EA	10			IAI	47.7	Q 11/C	JKIMI	ERIV VVIC	71,111	10			, ,	,00	KSES	
Drainage Basin and Course Name	Montana Number	O.ev,	Sec.	Twp.	Range	Record Began	Measuring Dates ^a	Feasured By:	Drainage Basin and Course Name	Montana Number		Sec. Lat.	Drp.	Range Long.	Record	Heasuring	Measure By:
ATTENNATION DEVICES	MISS	OURI	RIVER		RAINA					SSOUR				IAGE	CON		. Dy:
JEFFERSON RIVER (ROCK-BEAVERHEAD))																
Lakeview Ridge	1133	7400	27	145	2W	1948	3,4,5	9	81G HORN PIVER Wy Seavers Mill	9F8	8900	6	43N	102W	1948	2,3,4,5	12
Lakeview Canyon Limekiln White Pine Ridge	1124 1222 1251	6930 6950 8850	26 5 18	14S 15S 14S		1948 1948 1948	3,4,5 3,4 3,4	9 1 1	Cwl Creek Tensleep R.S.	8F1 753	8700 8300	36 30	43N 49N	101W 86W	1948 1935	2,3,4,5	12
(HORSE PRAIRIE)	14.14	00,0	10	THO	711	1740	2,4	ı	Timber Creek Ranger Creek Wood River	952 751 967	8800 8800 8000	25 32 28	47N 53N 46N	103W 88W	1948	4,5	12
Bloody Dick	13010	7600	12	8S	16W	1948	3,4	1	(SHOSHONE RIVER) W		0000	2.0	1011	103W	1939	2,3,4,5	12
Cold Stone Lemhi Pass Terrell Creek	1309 1351 13012	8100 7480 6650	11 9 14	8S 10S 9S	16W 15W 15W	1948 1948 1948	3,4 3,4 3,4	1 1 1	East Entrance	1056	7000	17	52N	109W	1948	1,2,3,4,5	5
Frail Creek Selway Junction	1382 13011	7D90 6800	15	10S 8S	15W 15W	1948 1948	3,4	1	Sylvan Pass TONGUE RIVER Wyon	1085	7100	12	52N	11-0W	1936	1,2,3,4,5	5
(BIG HOLE)									Sig Goose	7E2	7700	L ₆	53N	86W	1945	2,3,4,5	1
Big Role Pass	13D3 w)13D4	7440 6900	28 24	3S 3S	18W 18W	1948 1948	3,4	1	Burgess Ranger Sta Nome Lake	7E5	7900 8800 8200	36 11	56N 53N	89W 87W	1950 1950	2,3,4,5	12 12
East Boundary Sibbons Pass	13D5 13D2	6700 7100	22 4	3S 2S	17W 19W	1948	3,4	1,2	Lodgepole POWDER_RIVER	911	62· U	32	56N	106W	1940	4,5	1
Sahnke Creek Siner Forks Siner Lake	13D6 13D6	7340 7300	25 24	7S 6S	16W 17W	1948	3,4 3,4	1	North Powder	758	8500	5	47N	85W	1951	2,3,4,5	12
(WISE RIVER)	1307	6720	10	6S	16W	1945	3,4,5	1	Muddy Pass Soldier Park Sour Dough	787 736 6EL	9700 8700 8500	11 36 17	48N 51N 49N	85W 85W 84W	1950 1950 1936	2,3,4,5 2,3,4,5 2,3,4,5	1 12 1
nderson Fdw.	13814	7000	18	35	12W	1948	3,4	1	Red Fork	751	7000	18	43N	85W	1936	2,3,4,5	12
lk Norn ise River	13D15 13D13	8450 6300	15 15	4S 2S	12W 12W	1934 1948	3,4,5	2									
(RUBY RIVER)																	
ottonwood (Upper)	1152 1151	5900 8400	24 30	10S 10S	3W 2W	1948 1948	3,4	1			COL	IDI A	DIST	rn -			
lashlight obacco Root igilanto	12D3 12D2 11D1	6950 6900 6125	22 13 28	85 45 98	7₩ 4₩ 3₩	1945 1948 1948	3,4,5 3,4	1	KOOTSMAI PIVER	(COLUM	IDIA	KIV	ER B	421N		
ADISON RIVER	1101	3167	60	73)n	1748	3,4	7	Baree Mountain	1581	6000	1	25N	31W	1937	4,5	1
ebgen	1185	6550	22	118	38	1934	1,2,3,4,5	2	Blue Bird Basin Red Mountain	14A1 15A1	6800 6000	4	37N 36N	26W 29W	1937 1937	4,5 3,4,5	1
est Yellowstone orris Basin	11E7 10E2	6700 7500	448-44,	138	110°-421	1934 1935	1,2,3,4,5	2 5,6	PLATHEAD RIVER								
ULLATIN RIVER									Basin Creek Big Creek	13B14 1383	5000 6750	11 6&7	19N 22N	12W 18W	1951	2,3,4,5	1,
ovil's Slide	10D4 10D3 10D2	81.00 6600 6600	14 22	5S 4S	6E 6E	1935	2.3,L.5 2,3,L.5	2,6	Brush Creek Cattle Queen Desert Mouhtain	14A4 13A1 13A2	5000 4700 5600	13 7 24	30N 35N 31N	26W 17W 19W	1937 1939 1937	3,4,5 3,4,5 1,2,3,4,5	5
ystic Lake ew World L-Mile	1001 1156	6700 7150	30 24 1	3S 3S 11S	7E 6E 5E	1935 1939 1934	2,3,4 1,2,3,4,5 1,2,3,4,5	2,6 6,7 6,7	HellRoaring Divide Nolbrook	1443 13813	5770 4530	35 18	32N 21N	22W 13W	1942	3,4,5 1,2,3,4,5	î 1
SSOURI RIVER MAIN		1270	-	110	,,,	1754	41~121412	*	Kishenehn Limestone Pass	13B8	4300 7000	7 28	37N 18N	21W 12W	1946	4,5 3,4,5	5
nessman Reservoir	1205 901	6200 6100	2 24	8N 12N	5W 178	1936	1,2,3,4,5	2	Logan Creek Marias Pass Snow Lab. #16	14A5 13A5 13A9	4300 5250 5200	34 34 15	30N 30N 29N	24W 14W 14W	1937 1934 1946	3,4,5 1,2,3,4,5 1,2,3,4,5	2 2
ystal Lake asshopper ings Nill	1002	7000 7950	19	9N 13N	8E 7E	1941 1938 1937	3,4 3,4 3,4,5	1 2	Spotted Bear Mt. Strawberry Lake	13B2 13A10	7000 6500	23 11	25N 28N	15W 19W	1948	3,4,5	1
lenie Grounds Ipestone Pass	1206 12D1	6500 7200	35 22 11	5R 1N	6W 7W	1940	2,3,4	3	Trinkus Lake Trout Lake #2 Upper Nolland Lake	13R1 13A12 1385	6500 3600 7000	9 21 28	25N 28N 20N	17W 17W 16W	1948 1948 1948	3,4,5	1
temple Pass en Mile Creek, Low en Mile Creek, Midd		6900 6250 6800	16 13 13	13N 8N 8N	7w 6w 6w	1934	3,4,5	2	Trin Creeks Quintonkon	13B11 13A13	3580 3800	14	26N 26N	16W 17W	1951	3,4,5 2,3,4,5 2,3,4,5	1
en Mile Creek, Uppe		8000	19	8N	5W	1934 1935	1,2,3,4,5	2	Coyote Nill El Dorado Mine	13810 1309	L200 7800	12 23	18N 8N	16W 12W	1951 1946	1,2,3,4,5	1
ETON PIVER)	1241	6000	3.0	0/11	2.001	2010			Gold Creek Lake Intergaard	1308 1304 1308	7200 6150	14,	8N 5N 1LN	12W 13W 15W	1916 1939 1951	2,3,4	11 3 13
eldron Creek	1282	5600 6000	13 16 6	26N 25N 25N	10W 9W 9W	1948 1948 1948	3,4 3,4 3,4	1 1 1	Lubrecht Forest North Fork Jooko Pionio Grounds	1387 1206	5100 6330 6500	31 22	17N 5N	17# 6₩	1940	1,2,3,4,5 3,4,5 2,3,4	4 3
SUN RIVER)					•		.,.	_	Pipestone Pass Reiny Lako	12D1 1386	7200 1300	11 11	1N 18H	7 m	1938 1947	2,3,4,5 3,4,5	1
ench Mark abin Creek	12B8 1286	5500 5400	9	20N 23N	10W 10W	1948	3,4	1	Slide Rock Mountai Southern Cross Stemple Pass	1305 1301	7100 6500 6900	26 9 16	10N 5N 13N	16W 13W 7W	1937 1939 1934	2,3,4	3 2
-Bull ites Park	12B9 12B5	5600 5300	33 36 31	20N 24N	10W	1948	3,4 3,4 3,4	1	Storm Lake No. 2 Stuart Mill	1307 1306	7780 6500	19 19	Lin 5N	13W 13W	1939 1939	2,3,4 2,3,4	1 3
at Mountain Lake ong Creek Ridge	1287 1389	7000 7300 6800	20 21 17	22N 23N	10W 12W	1934 1950	3,4	2	Stuart Mountain #1	1301	7400	6	1LN	18W	1936	4	1
rong Creek	12B3 1284	5700	32	25N 25N	10W 10W	1949 1949	3,4	1	FEND OREILLE RIVER								
ARIAS RIVER)									Farse Fountain Freezeout Submit #	1381	6000	1 21	25 N 15 N	31W 27W	1937 1951	4.5 L	1
riss Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	2	Noodoo Creek	1501		9&16	14N	27 W	1937	ī.	1
TLK RIVER)									BITTERROOT RIVER East Fork Renger Str	n.13D1	51,00	16	211	17₩	1937	l.	1
eky Boy USSELSHELL RIVE)	9.41	5200	15	281	168	1941	3,4	7	Gibbons Fees Mud Creek Pasture	13D2 14C1	7100 L500	57 7	2S 11 N	19W 2LW	1934 1937	1,2,3,4,5	1
usselshell RIV R)	1003	7000	19	9N	88	1938	3,4	1	Nez Perce Camp Nezperce Pass	14D1	6575	19&20 32	1S 28N	23W 16E	1937	4	1 1 1
PER YELLOWSTONE)		,000	*/	714	Va	2750	2,14		Skalkaho Summit	1303	7259	30	6 N	17₩	1937	4	1
amp Senia	9D1 10E3	7890 7750	2	8S	18E 110°-30'	1937	4	1 12									
anyon ooks City revice Ft.	1007	7400 8400	25 29	9S 93	148 9E	1938 1937 1935	1,2,3,4,5 1,2,3,4,5 3,4	5									
na spendenco aks Camp	10D6 10E4	8000 7850	22	79	128 1100-241	1941	1,2,3,4,5	12		SACVA	TOURN	(/ A. h.i.	DIV	ED D	CINI		
upine Creek	1081	7300	440-541		1100-371	1938	1,2,3,4,5	5	ST. WARY RIVER	SASKA	TCHEW	AN	KIV	EK B/	4 SIIA		
orcupine	1003	6500	10	4R	108	1938	3,4	1	Iosberg Lake	13A3	6000 LB	0.501	1	130-421	1922	5	2,8
OWER YELLOWSTONE									Piegan Pesa #0	13AL 13AD	6500 LB	0-161 0-151	1	130-401	1922	5	2,8
wind River) Wyomin	10P2	9200	23	44N	110W	1939	2,3,4,5	12	Mount Allan #7 Ptarmigan #8	13A7 13AB		0-141 0-50+	1	13°-L0°	1922	5	2,8
irrougha Creek Inwoodie	9F6 9F10	8800 10000	15	43N 39N	107W 105W	1948	2,3,4,5	12									
ry Creek iNoir syser Creek	9F9 9F2 9F3	9500 8750 8500	34 27 12	4N 42N 41N	108W 108W	1948	2,3,4,5	12	a. Numerals 1,2,3,	4, and 5	refer to	January	1, Fe	bruary 1,	March 1	l, April l, e	nd May 1
obba Park ittle Warm	9G2 9F4	10000 9500	22 24	2S 41N	108W 108W	1948 1948 1948	2,3,4,5 2,3,4,5 2,3,4,5	12 12 12	b. Numerals refer	to Agency	that aco	ures th	a snow	ar vey	s follo	181	
osquito Park R.S. neridan R.S.	903 9F1	9500 7500	23	2S 42N	3W 109W	1940	2,3,4,5	12 12	2. U.		ioal Surv		U.S. 12	nginaer (Corps		
- Lewrence R.S. -Cross Ranch	9F11 9F5 9G1	9000 8000 8400	26 1 5	1N 43N 2S	107W 27d	1940	2,3,4,5	12 12 12	3. ¥о Ц. U.	ntana Pow S. Indian	er Compen; Service	У					
	10F1 Wyoming	9600	29	Isl ₄ N	110W	1948 1936	2,3,4,5	10	b. Mo		rk Servic eriment S em ma						
out Creek gwotee Fass Poro Agie River)		9500	23	31N	101W	1939 1936	2,3,4,5	12 12	8. Do	minion Wa	ter and Po						
out Creek gwotee Pass Popo Agie River) ue Ridge annier Meadews	802 804	9000	19	30N			-121412		70 00	O. 1768 W	manual.						
rout Creek gwotee Fass	8C2	9000 9000 8500 9000	19 12 3 13	30N 30N 31N 30N	103W 101W 101W	1948 1939 1939	3,4,5 2,3,4,5 2,3,4,5	12 12 12	10. U. 11. De	S. Surmau erlodge C	of Reole itizens Co vation Ser	metion ommitte					

STORAGE IN RESERVOIRS OF MONTANA April 1, 1953 MISSOURI RIVER BASIN - MONTANA

RESERVOIR	1	Usable		Reservoir Volumes	ង	1,000°s a.f.	
	diversion from	Capacity	1953	1952	1951	1950	10-yr. average 1943 - 1952
Lima Reservoir Ruby Reservoir Willow Creek Reser.	Beaverhead Ruby River Willow Greek	84.00 38.85 17.76	32.0	35.0	748.3	33.6	41.39
Hebgen Lake	Madison River	345.00	191.6	225.2	232.4	216.6	280.5
Middle Creek Reser.	Hyalite Creek	30° 11/1	7.62	7000	0.00	72.4	23.9
Lake Sewall	Missouri River	37.80	32.1	20.6	21.0	24.0	29.9
Hauser Lake		62.50	23.9	38.0	38.9	28.8	41.3
Lake Helena	Missouri River	10.45	•450	13.0	3.21	1.13	
Holter Lake Gibson Reservoir	Missouri Kiver N.Fk. Sun River	105.00	28.7	2/.e 66.99	7,4°4 80.6	20°8 16°6	57.00 55.30
Willow Creek Res.	N.Fk. Sun River	32.30	`	25.5	26.0	3.8	15.4
Pishkun Reservoir	N.Fk. Sun River	32.00		23.0	18.9	18.8	18.9
Bynum Reservoir	Teton River						
Lower Two Medicine Lake	Two Medicine River	17 °00					
Four Horns Lake	Badger Creek	20.00		8•6		0.9	8,15
Swift Reservoir	Birch Creek	30.00	13.6	25.3	30.0	21.3	25.4
Lake Francis	Dupuver & Birch Cr.	112.00	6.76	94.1	96.5	83.3	97.3
Ackley Lake	Judith River	5.82		3.74	71.86	4.36	4.63
Durand Reservoir	N.Fk. Musselshell	7.01	14.67		6.10	6.39	
Martinsdale Reservoir		23,10	11.96		12.08	10.9	
Deadman Basin "		52.50					
Fort Peck Reservoir	Missouri River	19,000,00	12750	12390	12960	11940	11993
Fresno Reservoir	Milk River	127,20	85.92	147.7	99.88	17.68	67° 28
Nel son Reservoir	Milk River	08*99		37.02	15.67	5.74	30.2
Mystic Lake	W.Rosebud Creek	20,80	4.61	4.63	5.25	4.26	6.16
Cooney Reservoir	Red Lodge Creek	27.50		13.45	14.05	14.08	17.13
Tongue River Reservoir	Tongue River	73.90	17.96	39.08	8.98	13.92	19.35
Sherburne Lake	Swiftcurrent Cr.	66.10	18.88	19.70	8.98	37.9	21.5
		MORBINO TIETA	MISAG GENTA ENGRONGING FIEN	1			
		I ELLOWS I ON	ב אזיים אדו	Surmown - MIC	501	,	

_ 16.9 61.1

13.7

13.8

202.3 152.4 13.2 61.2

154.8 557.0 23.500 56.0

456.60 819.80 30.10 155.00

Shoshor.
Wind River
Wind River (Bull
Wind River (Creek)

Shoshone River

Buffalo Bill Reservoir

Pilot Butte Reservoir Bull Lake Reservoir

Boysen Reservoir

263.9

169.7

269.1



STORAGE IN RESERVOIRS OF MONTANA April 1, 1953

COLUMBIA RIVER BASIN

1	Location on or	Usable		Reservoir	Reservoir Volumes in 1,000's a.f.	,000°s a.f.	
	diversion from	Capacity	1953	1952	1951	1950	10-yr. average
1	Flint Creek	31.00	23.8	20.9	19.9	18.4	. 22°4
	E.Fk. Rock Creek	16.04					
	Nevada Creek	12.60					
W.Fk. Bitterroot Res. V	W.Fk. Bitterroot	51.70			1.0	3.5	7.0
para:	Rock Creek	34.80	5,65	13.6	19.9	19.9	0,41
Hungry Horse Reservoir S	So.Fk.Flathead Riv. 5,		719.7	68.1			-
p	Flathead River	1,791,00	641.0	572.3	651.6	0.609	600 •2
_	Little Bitterroot*	36.10	30.84	36.12	35.66	29.00	19•45
—	Dry Fork Creek*	6.70	5.02	4.81	5.14	16.47	2.41
pard.	Flathead Irr. Proj.**	× 98°60	36.62	79.86	52.48	26.88	1,0.52
	Jocko Creek	3.6	Sno-bound	901/•	1	1	

Sum of two reservoirs on Little Bitterroot Sum of two reservoirs on Dry Fork Creek Sum of (8) eight reservoirs on Project



PRECIPITATION DATA FOR April 1, 1953 MONTANA

1	_		,	1 ,									1																
		cipitation	Departure	-2.23	-0.20	-1.19	-1.63	00.0	99.64	11.00	0.59	+0.45	72 [+	-1.79	+0.12	+0.16	99.0-	+0+10	-3.80	-1.61	-0.88		-10.70		-2.43	-2.20	1.52	-1.86	-1.04
		Pre	ma]	8,00	3.13	5.03	799.4	15.11	17.54	19.77	11.57	10.39	n Q	3.63	1.23	3.27	2.30	1.57	12.72	8.73	2.66	o C	0 0 0 0 0 0	2.40	4-45	17:17	4.11	3.76	3.55
		Accumul	1952-53 Nor	5.77	2.63	4.12	3.03	15.11	27.20	20.00	11,28	10.84	7.31	1.84	4.35	3.43	70.0	7.17	8.92	7.12	4.78		1,31	•	2.02	2°57	, . , .	1.90	2,01
	March	Dept.	from Normal	-0.26	-0.19	-0.42	-0.27	†70°0-	20°0	-1.68	-1.45	-0.68	17.0+	90.0-	-0.12	-0.57	2/.50	-0.28	-0.57	-0.76	-0-144	9	-0.22		-0.77	-0.39	0.18 0.18	-0.30	-0.22
			Mar.	06.0	0.45	0.56	0.42	1,62	000	1.37	0.48	1.03	1,50	0.45	0.74	0.22	0.51	0	1.65	1.34	0.70		0.28		0.23	0.45	0.68	27.0	6t7°0
	iZ.		Feb.	.71	1.03	76.	•35	7.5	4.50	2,29	1.96	1.93	ر در در	, E	1.46	1.02	61.	1.19	2.05	2.04	1.38	C	67	-07	.25	747	246	57.	27.
1	1953		Jan.	2.96	•73	1.27	1.60	7.07	14.00	13,14	7.30	5.68	10.0	58	•55	<u>.</u>	\$ C	1.46	2,20	1.60	1.08	r C	2.2	.70	.1	.36	0/.	85	.45
	1952	pitation	Dec.	.87	,24	.28	.27	2,43	2.TZ	3.42	1.03	1.42	80	.12	90.	ထို င	0 5	-43	2.23	74.	th.	70	.11	•08	E :	.15	10.	90.	•10
1	1952	nt Preci	Nov.	•28	•75	1.07	₹ 79°	98,	1.02	37	38	•72	96	27.	1.36	•	e r	.35	•	1.48	•83	Œ	77	•10	•17	<u>5</u> ,5	28	E	•25
		Current	Oct.	70	90°	E-1	.11	ည် မ	٠ د د	38.	• 13	.17	171,	.01	•16	55.	138	.13	•13	•19	.17	5	E	.11	.03	, t-1, 5	0.00	70.	•08
		Elev-	ation	3000	5533	5280	3529	5154	727 [01.1	24.85	24,35		7,300			3893 1770	1,1,85	6058	6999	6558		00 77	2180	1962	27/28	5159	2076	3026	
		Station		WEST OF DIVIDE Fortine	Butte (Airport)	Phillipsburg	Hamilton		Owando 1 SW		σĭ	Average (9)	CENTRAL DIVISION Babb	m	Great Falls (airport)	Helena (girport)	Livingston	Wisdom	West Yellowstone	Ф	Average (9)	EASTERN DIVISION	Fort Peck	Medicine Lake	Circle "	Silings #2	Glendi ve		Average (8)



PRECIPITATION DATA FOR April 1, 1953 NORTHERN WYOMING

								March			
	Elev-		1952			1953		Dept.	Accum	ulated Pre	Accumulated Precipitation
	ation		Curi	ent Pred	Current Precipitation			from	1952-53	Normal	Departure
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Normal			1
											1
	†186†1	•03	.21	20.	.14	.97	0.18	35	1.55	2.69	-1.14
	3825	00.	.19	.11	.12	.18	0.30	90.0-	06.	2,24	-1.34
	4061	00.	,16	80.	.28	04.	0,10	-0.02	1.32	2.35	-1.03
	9269	•36	1.94	.18	.54t	52.	0.45	-0.78	5.31	5.29	+0.02
	1336	.02	•30	90°	.80	•72	0.52	-0.39	27,2	3.86	-1.44
_	1954	,16	47.	90.	.56	24.	0.23	-0.26	1.57	2.73	-1.16
	6917	•03	•39	14.	277.	.13	0.37	-0.17	1.75	3.01	-1,26
		80.	277°	•13	•26	247•	0.35	-0.29	2,12	3.17	-1.05
	רפטין	00	7.0	C C	ן נ	7 2 2	0	02	1. 1.7	נו	0
1	130	370	17.	000	† •	1.22		VC•0-	Ct7+ 17	20.0	70°0-
	3680	.19	•19	.65	69.	.53	0.28	-0.47	2.53	3.36	-0.83
	5280	0.02	† ₇₀ •	22.	0,70	.91	0.27	-0.56	1.87	3.46	-1.59
	4542	91.	02.	•86 2	29.	₹.	E-1	-1.03	3.30	947•17	-1.16
- ' -	5000 1.850	01.	0470	72.	1,13	±16°	0	\ 0	0	-	(L
_	100t	01.	1.0V	210	± ,	0/0/	0, K	-0.go	2,5	07°77	+0.59
		21.	/:17.	:45	19.	1.22	0.20	-0.72	5.1.7	3.92	-0.75
1											



Þ	0	eci \$, ω		9	9	9	9	17	18	16		9	9	9	9	9	9		9	9	9	15	. 9	9	0			9	15	9
		TST %	20		76	88	98	100	99	107	92		108	111	77	101	87	111		96	100	102	119	113	106	110			93	110	102
(Inches)	Average	ATTO	9		10.4	11.8	0,0	7.0	10.9	6.6	16.6		13.1	17.2	10.6	6.4	9.3	6.6	\ \	20.2	16.5	10.1	23.0	12.7	13.6	8.7			•	9.5	•
) —		19/10	(+1/4		10.0	12.7	4.1	7.2	11.0	10.7	16.7		15.2	19.0	11.8	0.9	10.4	12.8							13.8	10.6			10.6	15.6	7•4
Water Content	lst	1050	2/1		11.6	10.3	Φ	7.2	15.5	13.9	26.1		11.6	15.2	9.5	3.0	7.4	7.5		18.2	15.4	8	30.0	10.8	11.4	7.6			8.3	10.0	S. S.
Wate	April	1051	1 (1		10.1	11.3	0	4.4	8.6	8.3	14.9		15.4	20.5	12.5	6.8	10.8	11.6		21,1	17.6	12.5	28.3	14.0	17.3	10.2		-	10.0	12.7	5.6
		1052	1//4		11.1	14.6	8.0	8.7	17.1	23.7	2.8		11.8	16.6	11.5	5.0	8	9.8	,	23.4	17.4	9.6	32.4	13.3	77.77	6.6			11.2	12.5	6.3
	Anri 1	1953			9.8	10.4	2.4	7.0	7.2	10.6	15.2		14.2	19.0	ი გ	5.1	8.1	11.0		19.3	16.5	10.3	28.0	77.77	14.4	9.6			8.6		
Snow	Depth (Tr.)	1953			33	70	6	28	21	30	77		43	53	30	17	31	33		53	847	33	72	7	917	36			31	3/4	21
Date	Survey	1953			1/1	1/1	3/11	5/11	3/30	3/30	3/30		3/15	3/15	3/13	3/12	3/13	3/12		3/17	3/17	3/17	4/1	3/15	3/17	3/14		,	3/18	3/29	3/18
Elev.					7400	6930	6950	8850	6200	6800	0029		2600	8100	2400	6650	2090	6500		2440		9029	7100	7340	7300	6720	9500		2000	8450	6300
No.	•				11E3	$11E_{\downarrow}$	12E2	1251	11E12	12E3	11E11		13010	1309	13E1	13012	13E2	13011		1303		1305	1302	1308	1306	1307	13016		13014	13015	15013
Drainage Besin	and Snow Course **		JEFFERSON RIVER	(Rock-Beaverhead)	Lakeview Ridge	Lakeview Canyon	Limekiln	White Pine Ridge	*Kilgore	*Camp Creek	*Blue Ledge Mine	(Horse Prairie)	Bloody Dick	Gold Stone	Lemhi Pass	Terrell Creek	Trail Creek	Selway Junction	(Big Hole)	e Pass	Big Hole Pass (Below)	East Boundary	Gibhons Pass	Jahnke Creek	Miner Forks	Miner Lake	*Moose Greek	(Wise Rive r)	Anderson Meadow	Elk Horn	Wise Kiver



MONTANA SNOW SUR VEYS - April 1, 1953

	7	-	1 FD 00			000		18 17 18 18 18		151
		rage Data	A			127		97 94 98 101 100 100		87 87 98 98
	Water Content (Inches)	Average	Avg.			11.9		12.6 11.6 17.2 21.4 16.3	1,	20.3 8.7 7.6 10.2
	tent (P	1949			15.3		14.6 14.4 20.6 27.8 22.5 18.8		21.0 10.8 10.7 11.4 20.6
	ter Cor	April 1st	1950			4.2 11.4 1.1		14.0 21.0 25.9 25.9 19.5		20.2 7.3 8.4 10.8 21.0
	Wa	April Past Re	1951			5.7 10.4		10.00 10.00 10.00 10.00 10.00		19.9 9.4 8.1 10.6 19.2
			1952			13.62		19.6 18.9 24.7 30.4 30.4		27.5 13.7 10.0 13.1 28.6
		April				7.4		12.2 10.9 16.8 21.7 15.2		18.8 7.6 6.6 9.8 16.8
	Snow	Depth (Th.)	1953			27 38 No Snow		\$\frac{1}{2}\frac{2}{4}\frac{2}{3}\frac{2}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac{2}{3}\frac		25 25 25 47
	Date	Of	1953			3/19 3/24 3/19		27/28 27/28 27/28 27/29		3/25 3/25 3/25 3/25
	Elev.					6950 6900 6125		6550 6700 7150 6500 3600 6500		8100 6600 6600 6700 7150
	No.					12D3 12D2 11D1		11E7 11E7 11E6 11E9 11E10 11E8		1004 1003 1002 1001 11E6
MISSOURI BASIN	Drainage Basin	Snow Course **		JEFFERSON RIVER (Con't.)	(Ruby River)	Flashlight Tobacc o Root Vigilante	MADISON RIVER	Hebgen West Yellowstone 21-Wile *Big Springs *Island Park *Valley View Norris Basin	GALLATIN RIVER	Devil's £lide Hood Meadow Mystic Lake New World 21-Mile

*Adjacent Basin



MONTANA SMOW SURVEYS - April 1, 1953

MISSOURI BASIN

Drainage Basin	No.	Elev.	Date	Snow			Water		Content (I	(Inches)		>
and			Jo v	Depth	April	-		1st		Average		Φ
Snow Course **			Survey	(In.)	1953	4	Past Red	w		pr	llst	©
			1953	1953		1952	1951	1950	1949	Avg	% AVE.	r
												Ŋ
MISSOURI RIVER MAIN STEM												
Chessman Reservoir	1205	6200	1/2	17	4.5	6.7	9.4	4.4	7.6	4.8	476	18
Crystal Lake	961	6100	4/4	32	10.2	16.4	10.6	10.5	15.4	12.2	178	13
Grasshopper	1002	2000	3/31	15	4.4	8.4	0.47	5.8	8.1	5.3	82	16
Kings Hill	1001	7950	14/5	39	11.6	17.0	13.7	17.1	16.9	13.3	87	15
Picnic Grounds	1306	6500										
Pipestone Pass	1201	7200	4/3	777	6.3	7.6	6.8	4.2	7.9	5.8	108	15
Stemple Pass	1201	0069	4/3	35	10.4	11.1	11.6	13.5	10.3	8.6	106	15
Tenmile, Lower	1202	6250	1/1	22	9.9	7.6	8.3	7.6	88	6.5	102	18
Tenmile, Middle	1203	0089	1/1	36	11.6	13.0	12.0	12.0	12.8	10.6	110	18
Tenmile, Upper	$12C_{4}$	8000	4/1	41	14.0	15.8	15.4	15.8	14.8	13.4	105	18
(Teton River)												
Fright Creek	121	0009	4/1	59	21.4	18.1	22.3	22.3	17.9	19.2	111	9
Waldron Creek	12B2	2600	3/31	17	2.9	7.2	4.6	10.7	9.5	ω	92	9
West Fork	12B1	0009	3 /31	52	20.6	19.6	21.0	24.6	19.9	19.9	103	9
(Sun River)												
Benchmark	12B8	5500	3/30	19	7.5	11.6	12.3		12.0	10.9	69	9
Cabin Cre ek	12B6	5400	1/1	19	5,8	8.2	6.7	•	7.5	7.5	77	5
5-Bull	12B9	2600	3/30	16	5.2	9.6	9.5	9.5	ω ω	8.7.	61	.9
Gates Park	12B5	5300	4/1	33	8.7	12.8	11.5	13.1	11.7	11.6	75	2
Goat Mountain	12B7	2000	4/1	36	10.4	14.4	12.7	15.2	13.4	10.3	101	15
Wrong Ridge	12B3	9800	3/30	53	20.8	21.2	26.2	28.5	22.5	23.8	88	ī
Wrong Creek	12BL	5700	3/59	38	11.7	15.6	17.3	20.02	15.7	16.1	29	7
(Marias River)												1
Marias Pass	12B5	5250	4/1	84	16.8	20.7	24.5	28.7	21.4	17.6	95	18
(Milk River)		į	7 -		-				,	-		
Mocky Boy	9 A 1	2200	1/1	13	0.47	5.1	5.8	5.1	6.7	5.4	8 5	12
Grasshopper	1002	7000	3/31	15	11-11	8	1,00	υ ω	2	ν, κ,	ر 0	16
		-	1111	1	<u> </u>	})	, , ,	->-	i •	1.1))



MILOSOCIET DESCRIPTION												
Drainage Basin	No.	Elev.	Date	Snow				Water	Water Content	(Inches		×
and			of	Dèpth			April 1st	1st		Average Data	Data	ψ.
Snow Course **			Survey	(Ih.)	April	114	ast Re	Past Recor ds		Apr	April 1st	ø
			1953	1953	1953	1952	1951	1950 1949	1949	Avgo	% AVE	r.
												ß
UPPER YELI OWSTONE												`
Camp Senia	901	7890	3/31	50	5.3	7.7	9	58	7.4	7.1	75	16
Canyon	10E3	7750	3/31	41	14.3	21.4	18.9	18.5	18.5	16.8	85	8
Cooke City	1007	7400	1/1	56	80	11.9	9.0	8.4	10.6	7.9	111	17
Crevice Mt.	1005	8400	1/1	31	9.2	14.6	9.5	47.6	13.0	10.0	26	19
Independence	1006	8000	3/25	53	19.7	25.2	19.5	21.2	1	18.2	108	12
Lake Ca mp	10E/	7850	3/31	28	9.5	14.2	11.7	15.6	15.2	10.8	91	16
Lodgepole, Wyoming	9E1	8200	4/1	31	10,1	13.0	15.8	. 1	14.9	11.0	36	16
Lupine	10E1	7300	3/30	31	9.3	16.4	10.8	11.7	1/1.2	10.2	91	15
*Lew is Lake Divide	10E9	2000	1/1	106	45.1	52.8	50.4	55.0	52.1	50.6	. 66	15
*Astor Creek	10E8	2700	4/1	80	33.0	41.3	39.9	38.8	38.6	32.0	103	10
*Tom Thumb Summit	10E7	7900	1/1	54	21.1	29.6	27.8	28.6	27 olt	25.1	84	7
(Shields Rive r)												
Porcupine	1003	9200	3/30	28	8.2	10.8	8,2	6.8	10.4	† • 9	128	15
									-			

* Adjacent Basin



MISSOURI BASIN

≥ 0 0 ×		1277728	245	10 18 16	124474
e Data	0	113 84 73 84 121 95	80 474 99	10t 42t 42t 42t 42t 42t 42t 42t 42t 42t 42	82 94 100 100 86
(Inches) Average April	0	24.9 17.6 10.1 10.2 22.3 7.3 7.4 28.8	15.8	9.4 8.0 7.1 21.7 6.5	12.3 14.0 14.3
Content 199	ì	29.5 10.5 11.1 19.8 77.2 1.2 1.2 1.2 1.3	22.8	000 W8 Wra 90	16.7 17.5 - 10.7 24.4
Water lst		33 113 113 10 10 10 10 10 10 10 10 10 10 10 10 10	18.2 10.5 27.7	12.6 10.2 7.1 28.9	25.02 20.03 20.03 20.03 20.03 20.03
Water April 1st Past Records		256 266 276 276 276 276 276 276 276 276 27	17.9	8	11.1 12.7 13.9 6.0 83.1
P 1952	ł	30 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	14.5 7.4 23.0	12.2 10.5 10.0 24.7 7.1	22,42 12,38 12,38 12,38
April 1953		28.1 14.8 8.2 7.5 18.7 8.7 8.7	12.7	20°8 7.14 7.05 8.05 8.05 8.05	10.1 12.1 6.5 8.1
Snow Depth (In.)		46 46 33 28 71 71 71	38 15 25 15	26 26 26 16	35 th 35
Date of Survey 1953		27200000 272000000000000000000000000000	3/28 3/28 3/25	3/25 3/26 3/25 3/21 3/31	3/27 4/1 3/27 3/27
Eleve	(£	9200 8800 8750 8500 9500 7500 8000	10000 9500 10000	9500 9000 8400 7900 8500 8600	9500 9000 9000 8500
No.	WYOWING Dam)	10F2 9F6 9F3 9F1 9F1 9F1	9F10 9F9 9G2	963 9F11 9F12 9F12 10F5 10F5	862 864 964 861 863
Draina ge Basin and Snow Course **	LOWER YELLOWSTONE (WORTHERN WYOMING) (Wind River, Wyoabove Div. Dam)	Brooks Lake #3 Burroughs Creek Du Noir Geyser Creek Little Warm Sheridan T-Cross Ranch *Togwotee Pass	Dinwoodie Dry Creek Hobbs Park	Mosquito Park St. Lawrence Trout Creek *Kendall *Loomis Park *Black Rock *Yellow Jacket	POPO AGIE RIVER Blue Ridge Grannier Meadows *Larsen Greek Sawmill Glade South Pass



MONTANA SNOW SURVEYS - April 1, 1953

MISSOURI BASIN

Drainage Basin	No.	Elev.	Date	Snow				Water	r Content	nt (Inches)		>-
and Snow Course **			of Survey	Depth (In.)	April 1953		April Past Re	1 1st Records		I	se Data	Φ α
			1953	1953		1952		1950	1949	Avg	1 500	i i
BIG HORN RIVER (Wyoming)								-				w .
Beavers Mill Owl Creek	9F8 8F1	8000	3/27	19	6.3	6.9	9.1	6.0	7.9	6.3	81	rv rv
Timber Creek Wood River Tensleen R.S.	9E2 9E7	9000	0,T%	21 16	なってい	r, 0, 0	7.2	7.00	7.00	000 1000	72 69	142
Ranger Creek	7E1	8800	1/1	74.	7.8	10.3	7.1	0.0	0 0 0	8.2	95	16
SHOSHONE RIVER							-					
East Entrance Sylvan Pass	10E6 10E5	7000	4/7 1/7	78 28	8.9	13.8	14.8	11.3	17.6 19.4	13.3	67	16
TONGUE RIVER												
Burgess Junction Big Goose	7527	7900	3/31	37	13.6	12.4	15.8	12.0	7.	13.4	101	18
Dome Lake	7E5	0006	3/31	27	7.2		7.2	70.0	1	0.0	105	2
POWDER RIVER												
Sour Dough North Powder	6 <u>B1</u> 7 <u>B</u> 8	8500 8500	3/30	.24 19	4.6	6.8	7.0	5.1	7.7	5.9	78	17
Soldier Park Muddy Pass	7E6 7E7	8700 9700	3/31	111	0 0 0 0 0 0	9.9	8.1.8	1°9 8°1	1 1	8 7 0	47 93	トト
CHEYENNE RIVER (South Dakota)												
Upper Spearfish	1 S.D.	6500	1/4	56	8.6	10.2	3.5	7.9	10.8	7.2	119	10



MONTANA SNOW SURVEYS - April 1, 1953

COLUMBIA BASIN

Drainage Basin	No.	Elev.	Date	Snow					Water	Water Content (Inches	(Inches)	>-
and Same Connection			Jo	Depth	April		April	l lst		Average	e Data	Φ
The coal se			JOEZ .	1062	1322	000	רמטר	rast necords	20101	April	131	ಥ
			. 6661	1922		1952	1951	1950	1949	Avg.	% Avg.	H
												Ø
UPPER CLARK FORK												
Coyote Hill	13811	7,200	3/30	30	11.7	14.9	ı	ı	1	ı	1	α
Chessman Res.	1205	6200	1/2	, †	4.5	6.7	7.0	4.4	7.6	7.8	76	18
East Fork R.S.	1301	5/100	3/28	22	8.3	10.3	9.5	7.6	10.8	5.7	1/16	15
Intergaard	1304	6450				`						١
Lubrecht Forest #6	1308	5400	L/4	77	1.4	5.9	3.6	ı	ı	ı	ı	к
North Fork Jocko	13B7	6330	4/1	107	42.7	20.17	45.8	56.3	70.0	6.04	10 [†]	13
Picnic Grounds	1306	9200					!					\
Pipestone Pass	1201	7200	4/3	1 7	6.3	7.6	6.8	7.5	7.9	5.8	108	15
Rainy Lake	13B6	7500	3/30	30	11.7	17.0	5,1	18.9	14.5	12.6	93	~
Skelkeho Summit	1303	7258	4/3	89	26.5	26.6	34.4	26.3	36.2	25.2	105	15
Slide Rock Mt.	1302	7100	4/1	45	15.1	15.5	17.6	18.0	18,8	14.0	108	17
Southern Cross	1305	6500										
Stemple Pass	1301	0069	4/3	35	10.4	11,1	11.6		10.3	9.8	106	15
Storm Lake #2	1207	7780	14/3	647	17.0	20.5	15.6	16.2	15.6	14.8	115	15
Stuart Mill	1306	6500										1
Stuart Mill #1	1301	2400	4/1	72	7.72	36.8	33.6	37.9	23.4	29.7	88	17
Tenmile, Lower	1202	6250	4/1	22	9.9	4.6	8.3	7.6	ω ω	6.5	102	18
Tenmile, Middle	1203	9800	4/1	36	11.6	13.0	12,0	12.8	12,8	10.6	110	18
Tenmile, Upper	1204	8000	4/1	41	14.0	15.8	15.4	15.8	14.8	13.4	105	18
*Lookout	15B2	5250	4/1	98	33.1	38.3	47.5	48.7	37.5	33.0	100	16



Drainage Basin	No.	Elev.	Date	Snow					Water C	Content ((Inches)	>-
and Snow Course **			Of	Depth	April		April Post B			Average	Dat	0 0
			1953	1953		1952	٦,	1950	1949	Avg.	% Avg.	ಸ ಓ
KOOTIENAI												တ
Blue Bird Brush Creek	1/A1 1/A1	6800	3/31	107 38 28	40.2	40.4	45.3	46.3	38.2 19.0	36.2	1111	56
	Canada	3500	1/2/cy	000	7.0.7	0.6	11.6	14.9	7-7	7.8	06	17
Fernie (New) Fernie Ridge	Canada Canada	4100 5600	3/26 3/26	41 70	13.7	24.1	16.7	1 1	1 1	1 1	1	ma
Ferguson Grav Creek	Cenada	5000	3/31	1,7 50	19.7	19.2	23.7	22.9	20,1	19.5	101	16
Kimberley Marble Canvon	Canada	3800	12/2)1 16	0.9	20,2	100	11.2	1.2	10-1- 10-1-	109	16
Nelson Greek Red Mt., Montana	Canada 15A1	3050 6000	3/30	57	17.7	17.6	18.0	19.9	18,6	14.0	126	16
Sandon	Canada	3500	1/7	38	15.2	12.0	11.8	7.7	12.8	11.	137	16
Sullivan Mine Upper Elk River	Canada Canada Cenada	4500 5100 1400	2/50 4/1 3/31	15 15	7,17	11.3	18.8	21.2	15.5	17.0 0.0.0	6 9 88 57 75	1789
BITTERROOT											\	
East Fork R.S. Hibbons Pass	13D1 13D2	5400 7100	3/28	725	28.0	10.3	9.8	7.6	10.8	5.7	146 119	15
Nez Perce Camp Nez Perce Pass	2 מלו נמי/נ	5580 6575	7 1 1 1	25	15.8	18,7	15.2	16.0	20.8	13.6	116	17
Skalkaho Summit Stuart Mt. #1	1303	7258	17/1	78 87	28.5	26.6	34.4	26.3	36.2	25.2	105	15
*Moose Creek	13016	6200	· ·	- 7			-	- (- \)	- I
*Savage Pass	104r	6000	4/1 3/31 2/30	† 8 <u>r</u>	30.3	0.51 -	34.0	34.4	24.6	26.4	115	71 21 2
*Packers Meedow	1402	5700	3/30	55	21.7	25.2	25.5	31.3	34.4	21.7	100	17



MONTANA SNOW SURVEYS April 1, 1953

COLUMBIA BASIN

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15/5 06/0
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Federal - State - Private COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"